REMARKS

This paper is being filed in response to the Notice of Non-Compliant Amendment mailed August 17, 2007, which indicated that claim 196 had an incorrect status identifier. Applicants have corrected the status identifier to read "New" to comply with 37 C.F.R. §1.121. Applicants submit that, other than this single change, this paper is identical to the Amendment filed on July 27, 2007.

Reconsideration and the timely allowance of the pending claims, in view of the following remarks, are respectfully requested.

In the Office Action of February 27, 2007, the Examiner rejected claims 82-83, 85-87, 89-94, 105-113, and 125-126, under 35 U.S.C. §103(a), as allegedly being unpatentable over Haas '556 (U.S. Patent No. 6,304,556) in view of Sato '358 (U.S. Patent Publication No. 2002/0012358); rejected claim 88, 98-104, 118-124, under 35 U.S.C. §103(a), as allegedly being unpatentable over Haas '556 and Sato '358 in view of Devine '708 (U.S. Patent No. 6,606,708); rejected claims 127-133, under 35 U.S.C. §103(a), as allegedly being unpatentable over Haas '556 in view of Johansson '505 (U.S. Patent. No. 6,480,505); rejected claim 134, under 35 U.S.C. §103(a), as allegedly being unpatentable over Haas '556 and Johansson '505 in view of Vimpari '671 (U.S. Patent No. 6,577,671); and rejected claims 135-138, under 35 U.S.C. §103(a), as allegedly being unpatentable over Haas '556 and Johansson '505 in view of Agrawal '777 (U.S. Patent No. 6,075,777).

Applicants thank the Examiner for the courtesies extended during the Examiner Interview of June 26, 2007.

By this Amendment, claims 82-138 have been cancelled and new claims 139-201 have been added. Applicants submit that no new matter has been introduced and support for the new claims may be found by the exemplary embodiments disclosed throughout the

written description.   As such, claims 66-138 are withdrawn and claims 139-201 are currently presented for examination, of which claims 139, 151, 164, 186, and 196 are independent.

Insofar as the §103(a) rejections are still deemed relevant in view of the claim cancellations and the introduction of new claims, Applicants respectfully traverse these rejections for the following reasons:

I.   Rejections Under 35 U.S.C. §103(a).

As indicated above, each of independent claims 139, 151, 164, 186, and 196 positively recites a plurality of self-configuring, individually addressable virtual nodes in which individual virtual nodes are independently operative to: (a) initiate and establish a wireless communication connection with any other self-configuring virtual node associated with the first network during a self-configuration process; (b) store information regarding the identities and/or location of other self-configuring virtual nodes with which the node has established a communication connection; (c) generate data and transmit the data to other virtual nodes with which the node has established a communication connection; and (d) receive data from virtual nodes and forward the data to other virtual nodes with which the node has established a communication connection. Such features are amply supported by the embodiments disclosed in the written description. (*See, e.g.*, Specification: page 10, lines 13-14; page 11, line 9 – page 12, line 9; page 13, lines 4-20; page 20, lines 8-21; page 21, line 19-page 22, line 16; FIGs. 2, 5-8).

By way of illustration only, various disclosed embodiments provide that self-configuring virtual nodes comprise individually-addressable entities that are enabled for wireless communications and are all equal to each other. (*See,* Specification: page 9, lines 12-13; page 10, lines 13-14, page 11, lines 9-10, page 23, lines 13-15). That is, the self-configuring virtual nodes are configured to be originators of data, recipients of data, and routers of data and, at any point in time, they have the capability of being aware of

themselves and their neighbors. (*See*, Specification: page 13, lines 4-11). Furthermore, the self-configuring virtual nodes are independently enabled with the capability to execute a self-configuration cycle either upon initialization or in the event of a disruption in the network structure. (*See*, Specification: page 23, lines 13-15). That is, the virtual nodes self-initiate a rules-based process to establish connectivity and form a network as well as be self-healing should the network be disrupted. (*See*, Specification: page 20, lines 10-19).

Once again, despite the Examiner's contentions, there is nothing in the asserted references that teach each and every element of the independent claims, including the features identified above. In particular, the Haas '556 reference is directed to providing two protocols for mobile ad-hoc networks, a routing protocol and a mobility management protocol. The mobility management protocol is based on Mobility Reporting Centers (MRCs) that locates mobile users within a large network by having some network nodes assume the *hierarchical* MRC function. (*See*, Haas '556: col. 5, lines 36-42).

Consistent with the hierarchical MRC functionality of Haas '556, when a node needs a route to a destination it must consult its associated MRC first. The associated MRC then obtains the location of the destination by communicating the request within the virtual MRC subnet. An MRC (or MRCs) that "covers" the destination node, responds to the querying MRC, which, in turn, responds to the querying node. The response is a spine route that connects the source node to the destination node through their respective MRCs. (*See*, Haas '556: col. 5, lines 51-58).

Moreover, the Haas '556 network is configured as a *hierarchical* two-tier ad-hoc network **20** having a plurality of network nodes **22** that are partitioned into four clusters **24, 26, 28** and **30**, each of which forms a corresponding tier-1 network. In each cluster, one node labeled **CH1, CH2, CH3** and **CH4**, respectively, is chosen to be a cluster head that forms the separate tier-2 network **32**. A route between two nodes that belong to two different tier-1 networks *is determined by the cluster head* of the source node through

400296503-1

querying the other cluster heads about the location of the destination within the tier-2 network. (*See,* Haas '556: col. 8, lines 39-55; FIG. 3).

Equally notable with respect to the notion of "adaptive" or "reactive" routing, Haas '556 provides that the zone routing protocol *pre-defines routing zones* for each node that include nodes whose distance from the subject node in hops is at most some predefined maximal number, referred to as the zone radius. The zone radius may be "adjusted" depending on costs or traffic patterns. (*See,* Haas '556: col. 5, lines 10-19; lines 26-35).

In so doing, Haas '556 clearly discloses a hierarchical network configuration in which *traffic between nodes depends on, and is directly controlled by, the management of a higher layer* (*i.e.,* MRC layer). As such, the nodes in the Haas '556 hierarchical network are *not* independently operative to initiate and establish a wireless communication connection with any other self-configuring virtual node associated with the first network, as required by the independent claims.

Moreover, based on the description of the zone routing protocol, the Haas '556 nodes are *not,* in any way, *self-configuring,* as required by the independent claims. Namely, Haas '556 merely discloses the capability to adaptive routing based on adjusting a zone radius, which has nothing to do with the nodes configuring themselves. As such, Haas '556 also fails to teach or suggest the remaining limitations of the independent claims.

Applicants further submit that none of the references of record cure the deficiencies identified above relative to the Haas '556 reference. For example, the Sato '358 reference is directed to enabling economical wireless communications between standardized networks and combinations of non-standardized nodes and other standardized networks. (*See,* Sato '358: par. [0007]). To this end, Sato '358 discloses the use of virtual half bridges and virtual proxy nodes. There is, however, absolutely no teaching or suggestion of self-configuring, individually addressable virtual nodes in which individual virtual nodes are independently operative to initiate and establish a wireless communication

connection with any other self-configuring virtual node associated with the first network during a self-configuration process, as required by the independent claims. For that matter, Sato '358 also fails to teach or suggest the remaining limitations of the independent claims.

Much like Sato '358, the Johansson '505 reference is devoid of any teaching regarding self-configuring virtual nodes. In particular, Johansson '505 is directed to improving the performance of polling-based packet switching communication systems. Johansson '505 provides an ad-hoc wireless communication system having *a master unit that controls one or more slave units*, coupled with a shared communication channel having at least an uplink (UL) channel and a downlink channel (DL) for each master unit-slave unit pair. The Johansson '505 method requires establishing a group of active nodes corresponding to one or more of the slave units having UL and/or DL data associated therewith for transfer, polling the group of active nodes according to Fair Exhaustive Polling (FEP), and alternately transferring information between the master and a next slave unit as polled according to FEP. (*See,* Johansson '505: col. 5, lines 39-60). There is, however, absolutely no mention, whatsoever, of self-configuring, individually addressable virtual nodes in which individual virtual nodes are independently operative to initiate and establish a wireless communication connection with any other self-configuring virtual node associated with the first network during a self-configuration process, as required by the independent claims.

Regarding the Zintel '281 reference, Applicants insist, once again, that it has no applicability in rejecting the claims of the present invention. Zintel '281 is directed to a Universal Plug and Play (UPnP) open network architecture. (*See,* Zintel '281: col. 4, lines 5-16). Regarding the configuration of network devices, Zintel '281 merely teaches that the UPnP protocol includes an automatic network introduction feature that establishes an appropriate configuration with an IP address for an embedded computing device **900** upon connection to a server computer on a computer network, so as to enable access to the device from a client. (*See,* Zintel '281: col. 49, lines 56-67; FIGs. 27, 28). That is, *once*

plugged into the network, computing device **900** executes a series of steps (*e.g.,* announcement, discovery, response, autonet, and device description) to achieve access to the network. Thus, by virtue of having to be already embedded into an established computer network to execute the access steps, the embedded computing device **900** cannot be construed as a self-configuring virtual node – much less, being independently operative to initiate and establish a wireless communication connection with any other self-configuring virtual node associated with the first network during a self-configuration process, as required by the independent claims.

Moreover, as best understood, none of the remaining references, including the Devine '708, Vimpari '671, and Agrawal '777 references, appear to teach or suggest the use of a autonomous self-configuring virtual nodes, as required by the independent claims.

For at least these reasons, Applicants submit that none of the references, whether alone or in reasonable combination, teach each and every element recited by independent claims 139, 151, 164, 186, and 196. Accordingly, claims 139, 151, 164, 186, and 196 are patentable over these references. And, because claims 140-154, claims 152-163, claims 165-185, claims 187-195, and claims 197-201 depend from independent claims 139, 151, 164, 186, and 196, respectively, claims 83-93, claims 140-154, claims 152-163, claims 165-185, claims 187-195, and claims 197-201 are patentable at least by virtue of dependency as well as for their additional recitations.

II. Conclusion.

All matters having been addressed and in view of the foregoing, Applicants respectfully request the entry of this Amendment, the Examiner's reconsideration of this application, and the immediate allowance of claims 139-201.
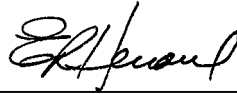
Applicant's Representative remains ready to assist the Examiner in any way to facilitate and expedite the prosecution of this matter. If any point remains in issue which

the Examiner feels may be best resolved through a personal or telephone interview, please contact the Undersigned at the telephone number listed below.

Please charge any fees associated with the submission of this paper to Deposit Account Number **03-3975**. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Dated: August 29, 2007   Respectfully submitted,

Customer Number **00909**   E. Rico Hernandez
                                           Registration No. **47,641**

                                           PILLSBURY WINTHROP SHAW PITTMAN LLP
                                           1650 Tysons Blvd.
                                           McLean, VA 22102
                                           (703) 770-7788

400296503-1